

ABSTRACT OF THE DISCLOSURE

When an amorphous silicon film is formed by a plasma CVD method, a hydrogen gas is supplied into a chamber before the start of film formation to cause discharge. In this state, film formation is not made. At the step where the discharge becomes stable, silane as a film forming gas is supplied into the chamber. At the same time, supply of the hydrogen gas is stopped. Silane is decomposed by the stable discharge, and film formation of an amorphous silicon film is made. By doing so, it is possible to eliminate the instability at the start of discharge. Film formation can be carried out in the state where the discharge is always stable. Also, in the plasma CVD method using silane as the film forming gas, supply of the silane gas is stopped in the state where the radio frequency discharge is maintained, and instead of the silane gas, the hydrogen gas as the discharge gas is supplied. For a predetermined period of time, plasma without film formation by decomposition of the hydrogen gas is formed. Since a negative self bias is applied to the formed surface in this state, negatively charged minute particles do not adhere to the formed surface. The discharge is stopped in the state where the minute particles in the atmosphere are exhausted. In this way, the state where the minute particles do not adhere to the formed surface can be made.